

# **PARIOGLOSSUS NEOCALEDONICUS, A NEW SPECIES OF MICRODESMID GOBY FROM NEW CALEDONIA (TELEOSTEI: GOBIOIDEI: MICRODESMIDAE)**

by

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**ABSTRACT.** - *Parioglossus neocaledonicus* sp. n. is described, based upon 43 specimens collected from the Rivière Tite and the Rivière La Dumbéa in New Caledonia. It is the first species of *Parioglossus* to be found in New Caledonia and is also the first species of the genus to be found in fresh to slightly brackish water.

**RÉSUMÉ.** - *Parioglossus neocaledonicus* sp. n. est décrite à partir de 43 spécimens récoltés dans le cours inférieur de la Rivière Tite et de la Rivière La Dumbéa en Nouvelle-Calédonie. C'est la première espèce de *Parioglossus* trouvée en Nouvelle-Calédonie et c'est aussi la première espèce de ce genre signalée en eau douce ou en eau légèrement saumâtre.

**Key-words.** - Gobioidei, Microdesmidae, *Parioglossus neocaledonicus*, New Caledonia, New species, Taxonomy.

The gobioid fish genus *Parioglossus*, of the family Microdesmidae, was first described by Regan (1912) for the species *P. taeniatus* Regan, 1912 and presently contains 14 Indo-western Pacific species (Rennis and Hoese, 1985). These are all known from mangrove marsh or marine habitats. During a recent inventory of New Caledonian freshwater fishes (project PEDCAL, "Poissons d'Eau Douce de Nouvelle-Calédonie") during September-October 1991, 43 specimens of *Parioglossus* were caught in fresh to brackish water which could not be attributed to any other species in the genus and are herein described as a new species. Previously, the genus was not recorded from New Caledonia.

## **MATERIAL AND METHODS**

Specimens studied are in the Muséum national d'Histoire naturelle, Paris (MNHN), the British Museum (Natural History), London (BMNH), and the American Museum of Natural History, New York (AMNH). Counts and measurements were made following Rennis and Hoese (1985). Some of the counts and measurements were made from radiographs. Lengths are expressed in % of standard length (SL). Measurements of the Holotype are given in parenthesis.

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*PARIOGLOSSUS NEOCALEDONICUS* N. SP.

(Fig. 1)

**Material examined**

*Holotype*. - MNHN 1991-6858, male, 22 mm SL. New Caledonia, Province Nord, northeast coast, Rivière Tite where crossed by dirt road approximately 2 km off Route 3, downstream from bridge. 23 Sept. 1991; 11.30-13.00 hrs.; altitude 10 m; temperature 23°C; pH: 5.5; width 5 m; depth 1.5 m; caught with dipnet near the surface in relatively fresh water with saltier water below; weather sunny, some clouds. P. Lamarque and G. Dingerkus, collectors. PEDCAL Sta. N 35B.

*Paratypes*. - MNHN 1991-6859, 17 females, 18-23.5 mm SL; BMNH 1991.12.17.1-3, 1 male, 25.5 mm SL and 2 females, 20-21 mm SL; AMNH 96801, 1 male, 21.5 mm SL and 2 females, 20-21 mm SL. All collected with the holotype. MNHN 1992.17, 11 males, 2 females, 12-25.5 mm SL. New Caledonia, Province Sud, southwest coast, Rivière La Dumbéa, along dirt road approximately 2 km west of Dumbéa. 30 Sept. 1991, 09.00-10.00 hrs.; altitude 0 m; temperature 24.6°C; pH 6.5; conductivity 35 mS; width 30 m; depth > 2 m; rotenone station along north coast; weather cloudy and drizzling; G. Dingerkus, B. Séret, P. Lamarque, E. Guilbert, R.M. McDowall, collectors; PEDCAL Sta. N 56.

*Non-type specimens*. - MNHN 1991-6860, 6 juveniles, 12-14 mm SL. Caught with the holotype.

**Diagnosis**

Vertebrae 10+15 in males; usually 11+14 in females with one exception of 11+15 (10+16 in all other species of *Parioglossus* (Rennis and Hoese, 1985)). Males with 12 to 14 vertical stripes under the second dorsal fin, a dark horizontal stripe running mid-laterally down the body, pelvic fin not extending to midway between the origin of the pelvic fin and the anus, and no black coloration around the anus. Females with a caudal spot followed by a single vertical stripe, pelvic fin not extending to midway between the origin of the pelvic fin and the anus, and with black coloration around the anus. Further sexual dimorphism exists in the species as the females do not have dark vertical bars under the second dorsal fin.

**Description**

Head length 18.6-21.7% (20.5); mouth length 8.1-9.5% (9.1); eye diameter 4.6-6.8% (4.6); tip of snout to eye 2.4-4.4% (3.6); snout tip to first dorsal fin 31.3-35.0% (34.1); snout tip to anal fin 54.9-61.9% (59.1); body depth 12.8-15.8% (13.6); caudal peduncle depth 6.8-9.8% (9.1); pectoral rays 19; first dorsal fin usually with five closely spaced spines with one spine further backward, two specimens with only the five closely spaced spines and lacking the further backward spine (5); second dorsal fin I-14 to I-16, usually I-16 (I-16); branched caudal rays 12-13, usually 13 (12); anal rays I-16 to I-17, usually I-16 (I-16); vertebrae in males 10+15, in females 11+14 to 11+15, usually 11+14; males with 12 to 14 vertical bars under the second dorsal fin (14); otoliths large, 3.2-5.1% (3.2); mid-lateral scales 103-110 (103); and a moderately high nuchal crest is present.

**Coloration in alcohol**

Background color is pale greyish. A mid-lateral black horizontal stripe originates on the snout and continues through the eye, and onto the caudal peduncle where it enlarges into a caudal spot on the caudal fin. Dorsal and ventral margins of the caudal fin with a dark stripe. In males 12-14 vertical bars are on the dorso-lateral sides under the second dorsal fin (Fig. 1). In females a small vertical bar is present behind the caudal spot (Fig. 1). A dark stripe is present down the dorsal surface from the back of the head to the end of the second dorsal fin. A



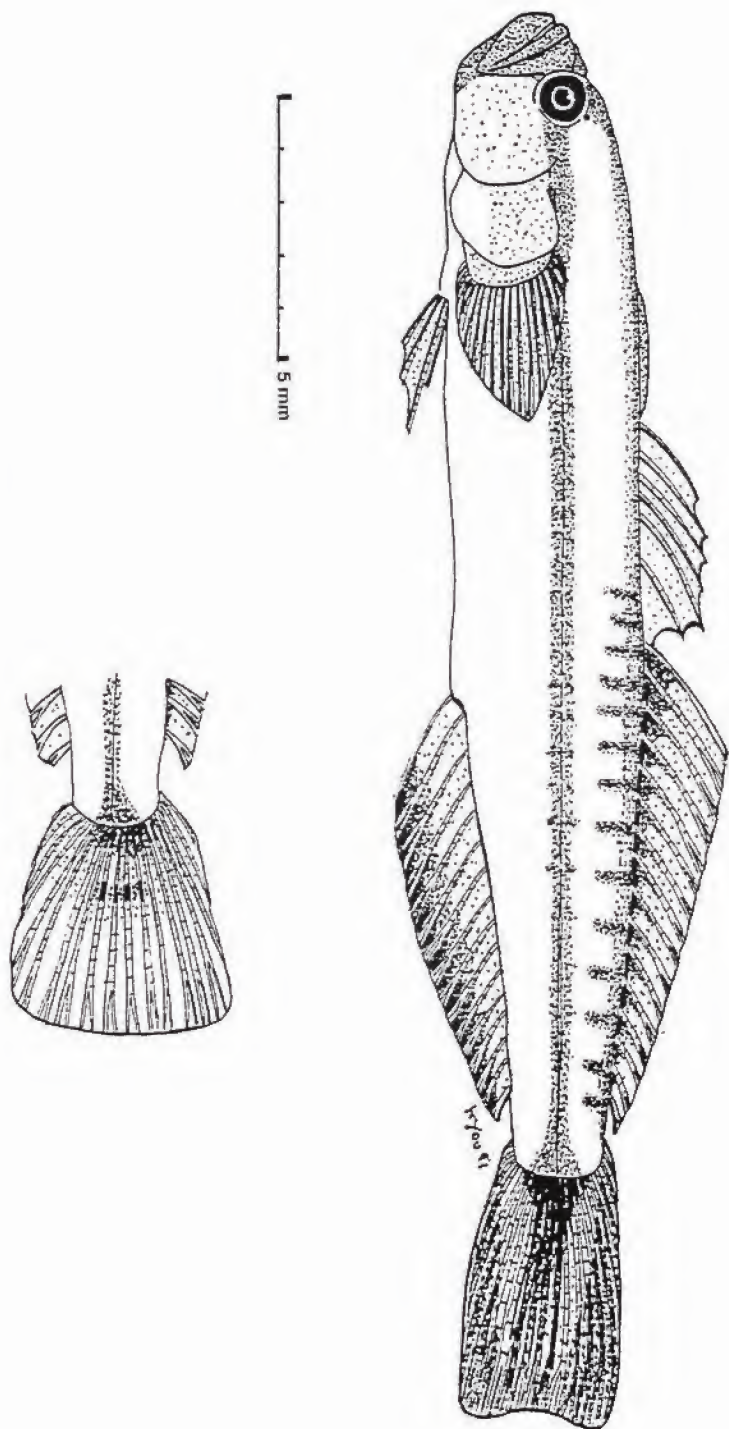


Fig. 1. - Top: Holotype of *Partoglossus neocaledoniensis* sp. n. (MNHN 1991.6858), male 22 mm SL. Bottom: caudal coloration in females of *Partoglossus neocaledoniensis* sp. n. (MNHN 1991.6859).

dark stripe is present along the distal extremity of the anal fin. Females with a dark spot around the anus.

#### Etymology

The species name *neocaledonicus* refers to the locality from which they were collected.

### DISCUSSION

This species seems to be closest to *P. verticalis* Rennis and Hoese, 1985 (known only from the holotype), with which the males share vertical bars on the latero-dorsal surfaces, mainly below the second dorsal fin. Females of *P. neocaledonicus* sp.n. lack these bars, but the coloration of *P. verticalis* females is unknown. However, *P. verticalis* does not have a horizontal mid-lateral dark stripe along its side. Also *P. verticalis* has a dark ring around the anus which is absent in males of *P. neocaledonicus* sp.n., but is present on females. Females of *P. neocaledonicus* sp.n. have a caudal coloration somewhat like that of *P. marginalis* Rennis and Hoese, 1985; however, in *P. neocaledonicus* sp.n. there is only one caudal stripe after the caudal spot, whereas in *P. marginalis* there are three. This is apparently the first species of the genus to be found living in fresh or slightly saline water. When caught, the fishes were hovering near the surface in a school of several hundred, about one meter from the rocky shore. Similar schooling behavior has been reported for *P. rainfordi* McCulloch, 1921 and *P. dotui* Tomiyama, 1958 (Rennis and Hoese, 1985). When approached, the fish rapidly swam into crevices among the rocks. The female paratypes of *P. neocaledonicus* sp.n. were all ripe adults with mature eggs, averaging 0.25 mm in diameter, in their ovaries. Thus it is believed they were very close to spawning.

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